fect conductor, such as honey, and which, though it communicated weak shocks, yet did not decompose water.

The author also ascertained that the electrical shocks of the torpedo, even when powerful, produced no sensible effect on an extremely delicate magnetic electrometer. He explains these negative results by supposing that the motion of the electricity in the torpedinal organ is in no measurable time, and wants that continuity of current requisite for the production of magnetic effects.

On a Method of comparing the Light of the Sun with that of the fixed Stars. *By* William Hyde Wollaston, *M.D. F.R.S.* Read December 11, 1828. [*Phil. Trans.* 1829, *p.* 19.]

In the Philosophical Transactions for the year 1767, a suggestion is thrown out by Mr. Michell, that a comparison between the light received from the sun and any of the fixed stars, might furnish data for estimating their relative distances; but no such direct comparison had been attempted. Dr. Wollaston was led to infer from some observations that he made in the year 1799, that the direct light of the sun is about one million times more intense than that of the full moon, and therefore very many million times greater than that of all the fixed stars taken collectively. In order to compare the light of the sun with that of a star, he took, as an intermediate object of comparison, the light of a candle reflected from a small bulb, about a quarter of an inch in diameter, filled with quicksilver, and seen, by one eye, through a lens of two inches focus, at the same time that the star or the sun's image, placed at a proper distance, was viewed by the other eye through a telescope. The mean of various trials seemed to show that the light of Sirius is equal to that of the sun seen in a glass bulb one tenth of an inch in diameter, at the distance of 210 feet, or that they are in the proportion of one to ten thousand millions; but as nearly one half of the light is lost by reflection, the real proportion between the light from Sirius and the sun is not greater than that of one to twenty thousand millions. If the annual parallax of Sirius be half a second, corresponding to a distance of 525,481 times that of the sun from the earth, its diameter would be 3·7 times that of the sun, and its light 13·8 times as great. The distance at which the sun would require to be viewed, so that its brightness might be only equal to that of Sirius, would be 141,421 times its present distance; and if still in the ecliptic, its annual parallax in longitude would be nearly $3''$; but if situated at the same angular distance from the ecliptic as Sirius is, it would have an annual parallax, in latitude, of $1''{\cdot}8$.

On the Water of the Mediterranean. *By* William Hyde Wollaston, *M.D. F.R.S.* Read December 18, 1828. [*Phil. Trans.* 1828, *p.* 29.]

The late Dr. Marcet in his examination of sea-water, of which he has given an account in the Philosophical Transactions for 1819, had